09/946,125

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Term: l7 and (nucleic acid$1 or amino acid$1)

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Set Name side by side	Query	Hit Count	Set Name result set
DB=USPT,JPAB,EPAB,DWPI; PLUR=YES; OP=ADJ			
L10	l7 and (nucleic acid$1 or amino acid$1)	13	L10
L9	L8 and (nucleic acid$1 or amino acid$1)	7	L9
L8	L7 and librar$3	121	L8
L7	array$2 near5 identifier$1	599	L7
L6	L5 and (identifier$1 or label$1 or marker$1)	1	L6
L5	6428957.pn.	1	L5
L4	L3 and (identifier$1 or label$1 or marker$1)	1	L4
L3	5945679.pn.	2	L3
L2	L1 and (identifier$1 or label$1 or marker$1)	1	L2
DB=DWPI,USPT,EPAB,JPAB; PLUR=YES; OP=ADJ			
L1	5837475.pn.	2	L1

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Search Results - Record(s) 1 through 10 of 13 returned.

☐ 1. 6417010 . 03 Mar 99; 09 Jul 02. Methods and apparatus for synthesizing labeled combinatorial chemistry libraries. Cargill; John, et al. 436/518; 235/439 340/572.1 435/6 435/DIG.1 435/DIG.14 435/DIG.21 435/DIG.29 435/DIG.34 435/DIG.49 435/DIG.9 436/523 436/524 436/525 436/526 436/527 436/528 455/92 530/334. G01N033/543 C12Q001/68 G08B013/14 A61K038/00.

☑ 2. 6408308 . 29 Jun 98; 18 Jun 02. System and method for generating, analyzing and storing normalized expression datasets from raw expression datasets derived from microarray includes nucleic acid probe sequences. Maslyn; Timothy J., et al. 707/104.1; 435/287.2 435/6 536/24.5 702/19 702/20. G06F017/30.

☐ 3. 6326140 . 08 Dec 97; 04 Dec 01. Systems for generating and analyzing stimulus-response output signal matrices. Rine; Jasper, et al. 435/6; 536/23.1 536/24.1 702/19. C12Q001/68 C12N015/11 G01N033/48.

☐ 4. 6309829 . 03 Dec 98; 30 Oct 01. Length determination of nucleic acid repeat sequences by discontinuous primer extension. Livak; Kenneth J., et al. 435/6; 435/91.2. C12Q001/68 C12P019/34.

☐ 5. 6258539 . 30 Apr 99; 10 Jul 01. Restriction enzyme mediated adapter. Hunkapiller; Michael W., et al. 435/6; 435/5 435/91.1 435/91.2 514/100 536/77 536/78. C12Q001/68.

☐ 6. 6232067 . 17 Aug 98; 15 May 01. Adapter directed expression analysis. Hunkapiller; Michael W., et al. 435/6; 435/5 435/91.1 435/91.2 436/501 536/24.3 536/24.31 536/77 536/78. C12Q001/68.

☐ 7. 6229911 . 24 Jul 98; 08 May 01. Method and apparatus for providing a bioinformatics database. Balaban; David J., et al. 382/128; 356/39 377/10 435/6. G06K009/00.

☑ 8. 6180351 . 22 Jul 99; 30 Jan 01. Chemical array fabrication with identifier. Cattell; Herbert F.. 435/6; 707/200. C12Q001/68 G06F012/00.

☐ 9. 6087186 . 02 Feb 95; 11 Jul 00. Methods and apparatus for synthesizing labeled combinatorial chemistry libraries. Cargill; John, et al. 436/518; 435/4 436/524 436/525 436/526 436/527 436/528 530/334. G01N033/543 G01N033/544.

☐ 10. 5935793 . 26 Sep 97; 10 Aug 99. Parallel polynucleotide sequencing method using tagged primers. Wong; Wing H.. 435/6; 435/91.1 435/91.2 536/23.1 536/24.33. C12Q001/68 C12P019/34 C07H021/04.

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Term	Documents
NUCLEIC.DWPI,EPAB,JPAB,USPT.	81415
NUCLEICS.DWPI,EPAB,JPAB,USPT.	10
AMINO.DWPI,EPAB,JPAB,USPT.	459031
AMINOES.DWPI,EPAB,JPAB,USPT.	1
AMINOS.DWPI,EPAB,JPAB,USPT.	441
AMINOE.DWPI,EPAB,JPAB,USPT.	105
ACID$1	0
ACID.DWPI,EPAB,JPAB,USPT.	1645803
ACIDA.DWPI,EPAB,JPAB,USPT.	37
ACIDB.DWPI,EPAB,JPAB,USPT.	11
ACIDC.DWPI,EPAB,JPAB,USPT.	39
(L7 AND (NUCLEIC ACID$1 OR AMINO ACID$1)).USPT,JPAB,EPAB,DWPI.	13

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size. For example, the local identifier may contain one or two letters representing the fabricator's name (16 bits) and data representing some other alphanumeric or other language designation. This local identifier is stored in memory 141 in association with the corresponding unique identifier and array layout.

Detailed Description Text (16):
Processor 140 then controls the fabricator, as described above, to generate the one or more arrays on substrate 10 which correspond to the received array layout information and unique identifier. Substrate 10 carrying the arrays 12, is then sent to writer 150 which, under control of processor 140, writes a first copy of the local identifier 356 corresponding to each array onto substrate 10 in association with that array (by being physically close to it in the manner shown in FIG. 1). The substrate 10 is then sent to a cutter 152 where each individual array 12 and its associated local identifier 356 are separated from the remainder of the substrate 10, as indicated by reference number 10b, to provide multiple array units 15. For each array unit 15, printer 350, under control of processor 140, prints as bar codes on a same label 354 a second copy of the corresponding local identifier 356 as well as the corresponding unique identifier 358. Printer 350 may also print a shipping address on that or another label (which may have been received from the remote user station or elsewhere). The array unit 15 is placed in package 340 onto which label 350 is applied so that the second copy of the corresponding local identifier 356 and unique identifier are visible from the outside of package 340. Alternatively, label 350 can be placed inside package 340 along with the corresponding array unit 15. In either manner, the second copy of the local identifier 356 and corresponding unique identifier 358, are physically associated with the corresponding array. The resulting package is then shipped to a remote user station (which may be the same or different from the remote user station from which the array layout information and unique identifier were received).

Detailed Description Text (18):
It will be appreciated that the fabrication station acts as a central fabrication station for each of multiple remote user stations, in the same manner as described above. Whether or not the fabrication station acts as a central fabrication station, it can optionally maintain a database of received unique identifiers, each in association with the corresponding local identifier and/or corresponding array layout information.

Detailed Description Text (19):
At the user station, the resulting package is then received from the remote fabrication station. Second reader 182 is used to read from package 340 the second copy of the local identifier 356. In this case, the corresponding unique identifier 358 is retrieved by second reader 182 also reading it from the package. These are stored in memory 184 in association with one another. A sample, for example a test sample, is exposed to the array 12 on the array unit 15 received in package 340. The array is then inserted into scanner 160 and interrogated by it to obtain interrogation results (such as information representing the fluorescence pattern on the array 12). The first reader also reads the first copy of the local identifier 356 present on the array substrate 10 in association with the corresponding array 12. Processor 162 retrieves the array layout information for the array corresponding to this read first copy of the local identifier 356, by accessing from memory 184 the corresponding unique identifier (which was previously saved in association with the corresponding unique identifier). From the unique identifier, processor 184 can obtain the array layout information since the array layout information was also previously saved in memory 184 in association with the corresponding unique identifier.

Detailed Description Text (20):
Once processor 162 has the array layout information corresponding to the read first copy of the local identifier 356, it can then control interrogation of the corresponding array by scanner 160 using such information and/or processing scan information to obtain feature information which is then associated with the layout information. For example, the array layout information could indicate that the scanner need not interrogate specific array addresses for a given test, or alternatively information read from that address can be ignored. Following array interrogation, the test sample can be evaluated for the presence of a target based on the results of the interrogation, either by processor 162 or by a user examining the interrogation results. The results of the evaluation, or alternatively the interrogation results

(processed or raw data), could be forwarded to a remote location for further evaluation and/or processing using communication channel 180 or reader/writer 186 and medium 190.

Detailed Description Text (21):
In a variation of the above particular methods, the unique identifier could be omitted from package 340 altogether (printer 350 only printing the corresponding unique identifier on label 354). In this case, following reading of the second copy of the local identifier from the package 340, the corresponding unique identifier could be retrieved from the user station from the remote fabrication station by accessing a database of saved local/unique identifiers in memory 141 through communication channel 180. Further, even the second copy of the local identifier could be omitted from package 340, the read first copy of the local identifier on the array substrate 10 could be used to retrieve the corresponding unique identifier in the foregoing manner. However, use of a package with a label or insert as described, avoids the user station having to contact the remote fabrication station to obtain the foregoing correspondence information, and further avoids the fabrication station having to maintain such data (possibly for a very large number of different remote user stations). Further, in another variation, the second copy of the local identifier could be provided from the fabrication station to the remote user station using the communication channel 180, particularly at the same time corresponding array layout information is being received from the same remote user station. This provision would be in a manner that it could be associated with the corresponding unique identifier by the remote user station (such as by either sending both simultaneously to the remote user station, or by timing).

Detailed Description Text (22):
In another variation, reader/writer 320 at the fabrication station can write onto media 324 the array layout information in association with the corresponding unique identifier and local identifier. This can be enclosed in package 340 as an alternative, or in addition, to the label 354 (if in addition, then media 324 would serve as a backup source of the local identifier and corresponding identifier information).

Detailed Description Text (27):
The substrate surface onto which the polynucleotide compositions or other moieties is deposited may be smooth or substantially planar, or have irregularities, such as depressions or elevations. The surface may be modified with one or more different layers of compounds that serve to modify the properties of the surface in a desirable manner. Such modification layers, when present, will generally range in thickness from a monomolecular thickness to about 1 mm, usually from a monomolecular thickness to about 0.1 mm and more usually from a monomolecular thickness to about 0.001 mm. Modification layers of interest include: inorganic and organic layers such as metals, metal oxides, polymers, small organic molecules and the like. Polymeric layers of interest include layers of: peptides, proteins, polynucleic acids or mimetics thereof (for example, peptide nucleic acids and the like); polysaccharides, phospholipids, polyurethanes, polyesters, polycarbonates, polyureas, polyamides, polyethyleneamines, polyarylene sulfides, polysiloxanes, polyimides, polyacetates, and the like, where the polymers may be hetero- or homopolymeric, and may or may not have separate functional moieties attached thereto (for example, conjugated),

CLAIMS:

1. A method of generating an addressable array of biopolymers on a substrate, comprising:

(a) receiving from a remote station, information on a layout of the array and an associated first identifier;

(b) generating a local identifier corresponding to the first identifier and associated array layout information, the local identifier being shorter in length than the corresponding first identifier;

(c) fabricating the addressable array on the substrate in accordance with the received layout information;

(d) applying a first copy of the local identifier to the substrate or a housing carrying the substrate;

(d) shipping the fabricated array and the first copy of the local identifier to a remote station; and

(e) forwarding a second copy of the corresponding local identifier to the remote station such that the local identifier is associated with the corresponding first identifier.

7. A method according to claim 1 wherein the second copy of the local identifier is shipped to the remote station on or in the same package with the corresponding first identifier and the fabricated array.

8. A method according to claim 7 wherein the second copy of the local identifier and first identifier are present together on a packaging containing the fabricated array.

10. A method according to claim 1 wherein the array and the first copy of the corresponding local identifier are shipped to the same remote station from which the corresponding first identifier and the layout information were received.

11. A method according to claim 1 wherein the array and the first copy of the corresponding local identifier are shipped to a remote station different from that from which the corresponding first identifier and the layout information were received.

13. A method according to claim 12 additionally comprising saving array layout information for each array in a memory, in association with the corresponding local identifier.

14. A method of generating, at a central fabrication station, addressable arrays of biopolymers on multiple substrates, comprising:

(a) receiving from each of multiple remote stations, information on a layout of an array and an associated first identifier;

(b) for each received first identifier and associated array, generating a local identifier corresponding to the first identifier and associated array, the local identifier being shorter in length than the corresponding first identifier;

(c) fabricating an addressable array on the substrate in accordance with each received layout information;

(d) applying a first copy of each local identifier to the substrate or a housing carrying the substrate, which substrate carries the array corresponding to the generated local identifier;

(d) shipping each of the fabricated arrays and the first copy of the corresponding local identifier to one or more of the remote stations; and

(e) forwarding a second copy of each corresponding local identifier to a remote station such that the local identifier is associated with the corresponding first identifier.

16. A method according to claim 14 additionally comprising applying a second copy of each local identifier and corresponding first identifier to a same medium, and shipping the medium and corresponding array to the same remote station from which the corresponding first identifier was received.

19. A method according to claim 18 additionally comprising saving array layout information for each array in a memory in association with the corresponding local and first identifiers.

20. A computer program product, comprising: a computer readable storage medium having

a computer program stored thereon for performing, when loaded into a computer communicating with a fabricator to fabricate an addressable array on the substrate, the steps of:

(a) receiving from a remote station, information on a layout of the array and an associated first identifier;

(b) generating a local identifier corresponding to the first identifier and associated array, the local identifier being shorter in length than the corresponding first identifier;

(c) controlling fabrication of the addressable array on the substrate in accordance with the received layout information;

(d) applying a first copy of the local identifier to the substrate or a housing carrying the substrate; and

(e) generating a second copy of the corresponding local identifier and forwarding the second copy to the remote station such that the local identifier is associated with the corresponding first identifier.

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L10: Entry 8 of 13 File: USPT Jan 30, 2001

DOCUMENT-IDENTIFIER: US 6180351 B1
TITLE: Chemical array fabrication with identifier

Abstract Text (1):
A method of generating an addressable array of biopolymers, such as DNA probes, on a substrate. The method includes receiving from a remote station, information on a layout of the array and an associated first identifier. A local identifier is generated corresponding to the first identifier and associated array, the local identifier being shorter in length than the corresponding first identifier. The addressable array is fabricated on the substrate in accordance with the received layout information. A first copy of the local identifier is applied to the substrate or a housing carrying the substrate. The fabricated array and the first copy of the local identifier are shipped to a remote user station. A method at the corresponding user station, and apparatus and computer program products useful at either station, are further provided.

Brief Summary Text (7):
In array fabrication, the quantities of DNA available for the array are usually very small and expensive. Sample quantities available for testing are usually also very small and it is therefore desirable to simultaneously test the same sample against a large number of different probes on an array. These conditions require use of arrays with large numbers of very small, closely spaced spots. Due to the precision required, and to maintain costs low, while end users may design their own array layout it will often be desirable to have the arrays fabricated at a fabrication facility and then shipped to the end user. Since the end user designed the array, they will have array layout information available to them at their own location. However, when an array corresponding to the array layout is received from the fabrication facility, some type of identification should be provided on the array substrate or a housing containing the array which allows matching that array to the layout information, since array layout information in some form is used to meaningfully interpret the information obtained from interrogating the array. Unique identifiers and their generation have been previously described, such as in U.S. Pat. No. 5,812,793, U.S. Pat. No. 5,404,523, and the references cited therein. Such unique identifiers (often referred to as "Globally Unique Identifiers" or "GUIDs", or "Universally Unique Identifiers" or "UUIDs") can, for example, include a network card identification which is specific to that card, along with a time and local counter number, and other components. Use of such unique identifiers in association with array layouts generated at the same or different locations, would virtually eliminate the possibility of the same identifier being associated with different array layouts. However, such unique identifiers typically require 128 bit data string. A string of such length when written, for example, as a bar code, typically takes up about 3 to 4 cm, which is more room than is often available on a substrate adjacent a typical array (which may be less than about 1 cm in any dimension).

Brief Summary Text (8):
It would be desirable then, if there was a way in which unique identifiers, such as GUIDs or UUIDs could still be associated with array layouts but without requiring, on an array or its housing, an amount of space (whether physical or data string length) normally occupied when such unique identifiers are written.

Brief Summary Text (10):
The present invention then, realizes that unique identifiers can still be associated with an array, without requiring the same amount of space on the array or its housing, which are normally required by such unique identifiers. In particular, the present invention realizes that this can be accomplished by using a second identifier of shorter length than a corresponding unique identifier, and which is associated in some

manner with the unique identifier.

Brief Summary Text (11):
In one aspect then, the present invention provides a method of generating an addressable array of chemical moieties on a substrate. The chemical moieties may particularly include biopolymers, for example polynucleotides (such as DNA or RNA) or peptides. The method includes obtaining information on a layout of the array (such as from a remote site or locally, for example from a local memory). An identifier corresponding to the array layout information is also obtained. The addressable array is fabricated on the substrate in accordance with the layout information. The identifier is applied to the substrate carrying the array (such as, for example, writing the identifier directly onto the substrate).

Brief Summary Text (12):
In another aspect, the present invention provides a method of generating an addressable array of chemical moieties on a substrate. The method includes receiving from a remote station, information on a layout of the array and an associated unique identifier. A local identifier is generated which corresponds to the unique identifier and associated array, the local identifier being shorter in length than the corresponding unique identifier. The addressable array is fabricated on the substrate in accordance with the received layout information. A first copy of the local identifier is applied to the substrate or a housing carrying the substrate. The fabricated array and the first copy of the local identifier are then shipped to a remote station.

Brief Summary Text (13):
Note that in the foregoing aspect, the association of the local identifier with the unique identifier, in order to recover the array layout information, could take place in a number of ways. For example, the method may further include forwarding a second copy of the corresponding local identifier to a remote station such that the local identifier is associated with the corresponding unique identifier. This forwarding may be in a manner such that the association of the local identifier and corresponding unique identifier, is indicated. For example, a second copy of the local identifier is communicated to a remote station following receipt of the corresponding unique identifier communicated from the remote station, or by applying both to a same medium (which provides physical association; such as packaging containing the fabricated array) which can then be shipped to the remote station. In an alternative example, this association could be stored at the same location at which the array is fabricated, and accessed from the remote location upon receipt of the array and first copy of the local identifier. Thus, either the remote location (such as a requesting station) or elsewhere (such as the fabrication location) could maintain a mappings (such as in a database or file) of unique identifiers each in association with the corresponding local identifier. Any such a database may optionally also contain the layout information.

Brief Summary Text (14):
Note that in the above discussion, the remote station from which array layout information is received can be the same or different from the remote station to which the second copy of the local identifier is provided. Thus, a fabricated array and the first copy of the local identifier on the array or its housing, can be shipped to a remote end user which is different from the remote station which provided the array layout information (the "requester"). In this manner, such a different end user can still use the array, simply by obtaining the layout information corresponding to the unique identifier, from the requestor or from elsewhere.

Brief Summary Text (15):
In another aspect of the present invention, a method of generating addressable arrays of chemical moieties on multiple substrates, at a central fabrication station is provided. In this aspect, information on a layout of an array and an associated unique identifier is received at the central fabrication station from each of multiple remote locations. For each received unique identifier and associated array, a local identifier is generated corresponding to the unique identifier and associated array, the local identifier being shorter in length than the corresponding unique identifier. An addressable array is fabricated on a substrate in accordance with each received layout information. A first copy of each local identifier is applied to the substrate

or a housing carrying the substrate, which substrate carries the array corresponding to the generated local identifier. Optionally, each fabricated array and the first copy of the corresponding local identifier is shipped to one or more of the remote stations. In this aspect, the central fabrication station may then deal with each of the remote stations in any of the same manners described above. When a database of the above described type is stored at the central fabrication station, this may include the referenced information from any one or more, or all, of the multiple remote stations.

Brief Summary Text (16):
In another aspect of the present invention, there is provided a method of using an addressable array of chemical moieties on a substrate. The method includes receiving from a remote fabrication station, the addressable array and a first copy of a local identifier carried on the array substrate or a housing for the array substrate, which local identifier corresponds to a unique identifier and associated array and is shorter in length than the unique identifier. The local identifier is read from the array substrate or housing and the corresponding unique identifier retrieved. Information on the layout of the associated array may be retrieved from a memory using the retrieved local identifier. This method can include providing any of those items received, or receiving any of those items provided, in the methods of generating an array described above. The providing or receiving may be by any means, either communication for only information, or shipping for physical items (including media carrying data or information). This method may further optionally include exposing a sample to the array, and interrogating the array following the exposure to the sample. Any of these steps may be performed at a first requesting station (that is, the same station).

Brief Summary Text (18):
In another aspect of the invention, there is provided an apparatus for producing an addressable array of chemical moieties on a substrate. This apparatus can include the components required to carry out one or more of the above array generation methods. Such an apparatus may include a processor to receive information on a layout of the array and a unique identifier associated with the array, and which generates a local identifier corresponding to the received unique identifier and associated array, the local identifier being shorter in length than the corresponding unique identifier. An array fabricator is also included to fabricate the addressable array on the substrate in accordance with the received layout information. A writing system is provided to apply a first copy of the local identifier to the substrate or a housing carrying the substrate. This writing system (which may have one or more of the same or different type writers) may also write to a medium (such as a label) a shipping address to which the addressable array is to be shipped, as well as the second copy of the local identifier and the corresponding unique identifier to another one or the same medium.

Brief Summary Text (19):
In a further aspect of the present invention, there is provided an apparatus for receiving an addressable array of chemical moieties on a substrate, which can execute one or more of the methods of using described above. The apparatus may include a first reader which reads a first copy of a local identifier carried on an array substrate or a housing for the array substrate, which local identifier corresponds to a unique identifier associated with the array and is shorter in length than the unique identifier. A processor retrieves the corresponding unique identifier using the read local identifier, and which retrieves information on the layout of the associated array from a memory using the retrieved unique identifier. The apparatus may also further optionally include a scanner to interrogate the array after it has been exposed to a sample.

Brief Summary Text (20):
The present invention further provides a computer program product including a computer readable storage medium having a computer program stored on it. The program can control, when loaded into a computer, an apparatus for producing an addressable array of chemical moieties on a substrate as described above, so that it will execute one or more of the steps required by it. In one aspect, the program performs the step of receiving from a remote station, information on a layout of the array and an associated unique identifier. A local identifier is generated corresponding to the unique identifier and associated array, the local identifier being shorter in length

than the corresponding unique identifier. Fabrication of the addressable array on the substrate is controlled in accordance with the received layout information. A first copy of the local identifier is applied to the substrate or a housing carrying the substrate.

Brief Summary Text (21):
In another aspect of the invention there is provided a computer program product including a computer readable storage medium having a computer program on it. The program can control, when loaded into a computer, an apparatus for receiving an addressable array of chemical moieties on a substrate, so that it will execute one or more of the steps required by it. In one particular aspect, the program performs the steps of receiving a local identifier from an array substrate or housing, the local identifier being shorter in length than a corresponding unique identifier. A second copy of the local identifier is received and in response to receiving the second copy, storing the local identifier in association with the corresponding unique identifier. The unique identifier is retrieved using the corresponding local identifier received from the array substrate or housing. Information on the layout of the associated array is retrieved from a memory using the retrieved unique identifier. Optionally, the program may also control interrogation of the array or processing information obtained from interrogation of the array, either in accordance with retrieved array layout information.

Brief Summary Text (22):
The various aspects of the present invention can provide any one or more of a number of useful benefits. For example, unique identifiers, such as GUIDs or UUIDs can still be associated with array layouts with the attendant advantages of using such unique identifiers, but without requiring, on an array or its housing, an amount of space (whether physical or data string length) normally occupied when such unique identifiers are written. Further, providing identifiers on the substrate particularly facilitates fabrication and enables multiple arrays with respective physically associated identifiers on a single substrate.

Drawing Description Text (3):
FIG. 1 illustrates a substrate carrying multiple arrays and a local identifier associated with each, such as may be fabricated or used by methods and apparatus of the present invention;

Drawing Description Text (7):
FIG. 5 illustrates an array housing carrying a local identifier.

Detailed Description Text (2):
Throughout the present application, unless a contrary intention appears, the following terms refer to the indicated characteristics. A "biopolymer" is a polymer of one or more types of repeating units. Biopolymers are found in biological systems and particularly include peptides or polynucleotides, as well as such compounds composed of or containing amino acid or nucleotide analogs or non-nucleotide groups. This includes polynucleotides in which the conventional backbone has been replaced with a non-naturally occurring or synthetic backbone, and nucleic acids in which one or more of the conventional bases has been replaced with a synthetic base capable of participating in Watson-Crick type hydrogen bonding interactions. Polynucleotides include single or multiple stranded configurations, where one or more of the strands may or may not be completely aligned with another. While probes and targets of the present invention will typically be single-stranded, this is not essential. A "nucleotide" refers to a sub-unit of a nucleic acid and has a phosphate group, a 5 carbon sugar and a nitrogen containing base, as well as analogs of such sub-units. Specifically, a "biopolymer" includes DNA (including cDNA), RNA and oligonucleotides, regardless of the source. An "oligonucleotide" generally refers to a nucleotide multimer of about 10 to 100 nucleotides in length, while a "polynucleotide" includes a nucleotide multimer having any number of nucleotides. A "biomonomer" references a single unit, which can be linked with the same or other biomonomers to form a biopolymer (for example, a single amino acid or nucleotide with two linking groups one or both of which may have removable protecting groups). A biomonomer fluid or biopolymer fluid reference a liquid containing either a biomonomer or biopolymer, respectively (typically in solution). An "array", unless a contrary intention appears, includes any one or two dimensional arrangement of addressable regions bearing a

particular chemical moiety to moieties (for example, biopolymers such as polynucleotide sequences) associated with that region. An array is "addressable" in that it has multiple regions of different moieties (for example, different polynucleotide sequences) such that a region (a "feature" or "spot" of the array) at a particular predetermined location (an "address") on the array will detect a particular target or class of targets (although a feature may incidentally detect non-targets of that feature). In the present case, the target will be in a mobile phase (typically fluid), while probes ("target probes") will be bound to the substrate at the various regions. An "array layout" refers to one or more characteristics of the array, such as feature positioning, feature size, and some indication of a moiety at a given location. "Hybridizing" and "binding", with respect to polynucleotides, are used interchangeably. "Binding efficiency" refers to the productivity of a binding reaction, measured as either the absolute or relative yield of binding product formed under a given set of conditions in a given amount of time. "Hybridization efficiency" is a particular sub-class of binding efficiency, and refers to binding efficiency in the case where the binding components are polynucleotides. It will also be appreciated that throughout the present application, that words such as "upper", "lower" are used in a relative sense only. A "set" may have one type of member or multiple different types. "Fluid" is used herein to reference a liquid. By one item being "remote" from another is referenced that they are at least in different buildings, and may be at least one, at least ten, or at least one hundred miles apart. Reference to a singular item, includes the possibility that there are plural of the same items present. By one thing being "remote" from the other, is referenced that they are at least in different buildings, and may be at least one mile apart, or at least ten, twenty, or even at least one hundred miles apart. By one item being "forwarded" from one place to another includes the possibility of that item being sent by any means possible for that type of item. Thus, in the case where that item is only information, forwarding of that item includes the possibility of it being communicated or being written onto a medium which is then shipped (that is, physically transported). However, physical items (such as a substrate or storage medium) cannot be communicated. Similarly, by an item being "received" includes the possibility of it being received by any means possible for that type of item. By "communicated" or similar terms, is referenced electronic communication on any type of device by which information can be transmitted or received (for example, over a network such as a telephone or WAN, satellite, radio, or the like, or any combination of those).

Detailed Description Text (14):
In operation of the apparatus, processor 162 at the illustrated user station has access to array layout information in memory 184. This layout information could have been manually input by a user through a suitable user interface device (not shown) communicating with processor 162, or could have been read of a portable storage medium 190 by reader/writer 186, or received from a remote location through communication channel 180 and communication module 164. Processor 162 then generates a unique identifier, such as in the format described in U.S. Pat. No. 5,812,793. For the "network address" portion of the GUID, processor 162 can use a the unique network card identification returned from a network card (not shown) communicating with processor 162 and currently assigned by network card manufacturers. However, other unique identifications could be used instead, such as unique identifications now being provided in each microprocessor of the PENTIUM III class, manufactured by Intel Corporation, CA. This unique identifier is saved in memory 184 in association with the corresponding array layout.

Detailed Description Text (15):
The array layout information and associated unique identifier, are then forwarded to the fabrication station. This can be done, for example, by communicating such information from the remote user station through communication channel 180 or by writer/reader 186 writing a disk 190 carrying the array layout information and associated unique identifier which is then shipped to the fabrication station. In either event, this data is received at the fabrication station such as through communication module 144 or by reader/writer 320 reading disk 190. At this point processor 140 generates a local identifier corresponding to the unique identifier and the associated array which will be fabricated from the received layout information. The local identifier is shorter in length than the corresponding unique identifier. That is, for a 128 bit unique identifier, the corresponding local identifier might be about no more than 1/2 the size, or no more than 1/4 or even no more than 1/16 the

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☑ 1. 6417010 . 03 Mar 99; 09 Jul 02. Methods and apparatus for synthesizing labeled combinatorial chemistry libraries. Cargill; John, et al. 436/518; 235/439 340/572.1 435/6 435/DIG.1 435/DIG.14 435/DIG.21 435/DIG.29 435/DIG.34 435/DIG.49 435/DIG.9 436/523 436/524 436/525 436/526 436/527 436/528 455/92 530/334. G01N033/543 C12Q001/68 G08B013/14 A61K038/00.

☑ 2. 6326140 . 08 Dec 97; 04 Dec 01. Systems for generating and analyzing stimulus-response output signal matrices. Rine; Jasper, et al. 435/6; 536/23.1 536/24.1 702/19. C12Q001/68 C12N015/11 G01N033/48.

☑ 3. 6258539 . 30 Apr 99; 10 Jul 01. Restriction enzyme mediated adapter. Hunkapiller; Michael W., et al. 435/6; 435/5 435/91.1 435/91.2 514/100 536/77 536/78. C12Q001/68.

☑ 4. 6232067 . 17 Aug 98; 15 May 01. Adapter directed expression analysis. Hunkapiller; Michael W., et al. 435/6; 435/5 435/91.1 435/91.2 436/501 536/24.3 536/24.31 536/77 536/78. C12Q001/68.

☑ 5. 6087186 . 02 Feb 95; 11 Jul 00. Methods and apparatus for synthesizing labeled combinatorial chemistry libraries. Cargill; John, et al. 436/518; 435/4 436/524 436/525 436/526 436/527 436/528 530/334. G01N033/543 G01N033/544.

☑ 6. 5935793 . 26 Sep 97; 10 Aug 99. Parallel polynucleotide sequencing method using tagged primers. Wong; Wing H.. 435/6; 435/91.1 435/91.2 536/23.1 536/24.33. C12Q001/68 C12P019/34 C07H021/04.

☑ 7. 5770455 . 07 Jun 95; 23 Jun 98. Methods and apparatus for synthesizing labeled combinatorial chemistrylibraries. Cargill; John, et al. 436/518; 435/4 435/DIG.41 436/524 436/525 436/526 436/527 436/528 530/334. G01N033/543 G01N033/544.

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Term	Documents
NUCLEIC.DWPI,EPAB,JPAB,USPT.	81415
NUCLEICS.DWPI,EPAB,JPAB,USPT.	10
AMINO.DWPI,EPAB,JPAB,USPT.	459031
AMINOES.DWPI,EPAB,JPAB,USPT.	1
AMINOS.DWPI,EPAB,JPAB,USPT.	441
AMINOE.DWPI,EPAB,JPAB,USPT.	105
ACID$1	0
ACID.DWPI,EPAB,JPAB,USPT.	1645803
ACIDA.DWPI,EPAB,JPAB,USPT.	37
ACIDB.DWPI,EPAB,JPAB,USPT.	11
ACIDC.DWPI,EPAB,JPAB,USPT.	39
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